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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/656,325	09/06/2000	Steven D. Nelson	14073US01	9079

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EXAMINER

CHAMBERS, TROY

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/656,325

Applicant(s)

NELSON ET AL.

Examiner

Troy Chambers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 66, 67 and 88-90 is/are pending in the application.
- 4a) Of the above claim(s) 88 and 89 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 66, 67 and 90 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 88 and 89 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 03/27/06.

2. Applicant's election of claims 88 and 89 in the reply filed on 03/27/06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### *Drawings*

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the 1) means by which the logic device stores activation energy (claims 66 and 90)<sup>1</sup> and the means by which the logic device discharges stored activation energy<sup>2</sup> (claim 90) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate

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<sup>1</sup> The specification clearly identifies the ERC 302 as storing the activation energy (pg. 12, ll. 21-22) and the ERC is shown *outside* the logic device as shown in Fig. 3.

<sup>2</sup> The disclosure requires a bleed resistor to discharge stored energy. However, no bleed resistor is shown. An argument directed to what is well-known is insufficient. While bleed resistors are known, its position and configuration within the applicant alleged invention are not. Moreover, the rules are clear in that all claimed subject matter **must** be shown in the drawings.

prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The specification is objected to under 37 CFR § 1.71(a). The specification must include:

a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same.

The specification fails to enable one having ordinary skill in the art to make or use the disclosed invention because it does not make clear the two conditions known as the analog condition and the firing condition. At one point, the specification defines the

analog condition as "the voltage level on the cable network 204, modulation depth, or frequency." (Pg. 19, ll. 7-10). However, another portion of the specification equates the analog condition with the firing command. (Pg. 20, ll. 10-11). Moreover, there does not appear to be a disclosure that describes the firing condition. The specification does not disclose the nature of the bus system when it is in the analog condition or how it differs when it is in the firing condition. Furthermore, the specification does not appear to disclose how or in what manner the bus is capable of changing the system from one condition to the other.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 66, 67 and 90 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As discussed above in the objection to the specification, it is not clearly disclosed what applicant defines as the analog condition of the network and the firing condition of the network. The analog condition seems to be defined by several functions (voltage, modulation depth, frequency, firing signal) while the features of the

firing condition are not disclosed at all. What is the condition of the bus when it is in the analog condition? What is the condition of the bus when it is in the firing condition? If the altering of the bus from an analog condition to a firing condition is considered novel, how or in what manner is the bus capable of performing this function? A review of the original claims presents even more confusion. A review of original claim 28 required the firing of the pyrotechnic device if the "analog condition of the network corresponds to **an analog firing condition**". (Emphasis added). What is an "analog firing condition"?

7. Claim 67 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 67 requires the "means for altering" to be capable of altering "one or more" of the voltage level, frequency, or modulation depth. The Examiner cannot find support in the specification in which a device is disclosed as capable of altering "one or more" of these conditions. The subject matter of claim 67 was not disclosed in an originally presented claim. Please respond with a showing of express support in the specification for this function.

8. Claim 67 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 67 recites the limitation "the means for altering". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102/103***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 66, 67 and 90 rejected under 35 U.S.C. 102(e) as anticipated by U.S. 6584907 issued to Boucher or, in the alternative, under 35 U.S.C. 103(a) as obvious over the applicant's admissions. As the claims can best be understood in view of the rejections/objections cited above, Boucher discloses initiators 16, 18, 20, 22, network bus 14, logic device (col. 6, ll. 7-17); coded signals (col. 5, ll. 58-65; col. 9, ll. 49-59); energy reserve capacitor (col. 4, ll. 63-65); bleed resistor (col. 14, ll. 45-47); bus interface (col. 9, ll. 8-14); means for altering and transmitting (controller 12); logic device for storing activation energy (col. 13, ll. 39-51; col. 14, ll. 15-65); logic device for releasing stored energy after conditions met (col. 5, line 65 to col. 6, line 2); and, means for altering analog condition altering voltage level (col. 5, line 65 to col. 6, line 2). All communications between the initiator 22 and bus 14 are coded (col. 9, ll. 49-56; col. 10,

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ll. 5-17). The system includes an arming signal (col. 11, line 10) and a firing signal (col. 10, ll. 52-54). The arming signal obviously comes before the firing signal. Each initiator 22 has a sensor that can sense conditions precedent to firing (after arming) such as temperature, voltages, frequencies, current draw, etc. (col. 12, ll. 37-45). The initiator can then "decide" whether to fire.

12. If on the other hand, the Examiner misunderstands the claimed invention and Boucher is not capable of firing unless the proper analog and firing conditions are present, then Boucher makes obvious claims 66, 67 and 90 in view of applicant's admission that logic devices are well-known in the art (pg. 11, l. 9). In fact, not only did the applicant admit logic devices are well-known but that the *design and use of logic device 300* are known. Logic device 300 is part of applicant's claimed invention shown in Fig. 3. Therefore, all configurations and functions (testing, arming, disarming, firing when commanded by the bus controller) of logic device 300 should have been known as well. At the time of the invention, one having ordinary skill in the art would have found it obvious to provide the system of Boucher with the logic device 300. The suggestion/motivation for doing so would have been to allow the disarming of the pyrotechnic device if it is no longer desired to carry out the firing function.

13. In view of the objections/rejections above, if Boucher does not disclose a logic device as claimed by the applicant in claims 66, 67 and 90, the claims would be obvious over US 5460093 issued to Prinz in view of Boucher. Prinz discloses a programmable initiator 10 including a capacitor 28/32, logic circuit 30 and bridge initiator 18 and a controller 14. Referring to column 10, lines 23-54, when the logic circuit receives an 1)

ARM command, 2) power is applied to leads L1 and L2 to charge the firing capacitor 32 (analog condition to firing condition). Thereafter, a FIRE command is sent to logic circuitry 30. The fire command cannot be carried out if a voltage sensor 66 does not detect the proper voltage across capacitor 32. Boucher discloses an electronic ordnance system as discussed above including the requirement that all digital signals sent to and from the bus controller and initiators are coded. At the time of the invention, one having ordinary skill in the art would have found it obvious to provide the controller 14 and initiator device of Prinz with the ordnance system of Boucher. The suggestion/motivation for doing so would have been to provide for increased security and safety when using the device, such security and safety features enhanced by the digital coded features of Boucher.

### ***Response to Arguments***

14. Applicant's arguments with respect to claim 66 have been considered but are moot in view of the new ground(s) of rejection. The examiner has provided a reference in which discloses an ARMING and FIRING command (corresponding to the analog condition) and a voltage sensor 66.

15. To assist in allowance of the case the applicant should provide an explanation of those features believed to be missing from the prior art. Such explanation should include an explicit reference to the specification, which discloses the feature in accordance with 35 USC 112, 1<sup>st</sup> paragraph. For example, if the applicant insists that the analog to firing condition is not disclosed, applicant should provide a reference to the disclosure that explicitly describes the analog condition, the firing condition, how one

condition is transformed into the other. Also, applicant should explain how an analog condition can be characterized by voltage, frequency or modulation while at the same time being equivalent to the firing command. It was believed that the firing command should have been digital in nature.

### ***Conclusion***

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

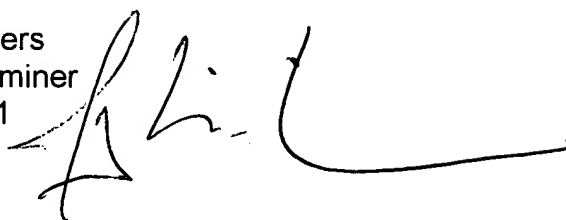
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Troy Chambers whose telephone number is (571) 272-6874 between the hours of 7:00 a.m. to 3:30 p.m., M-F. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone, can be reached at (571) 272-6873.

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Troy Chambers  
Primary Examiner  
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A handwritten signature in black ink, appearing to read 'T. Chambers', with a long horizontal flourish extending to the right.

TC  
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